Cotton topping as a way to reduce farmer's reliance on insecticides in Mali

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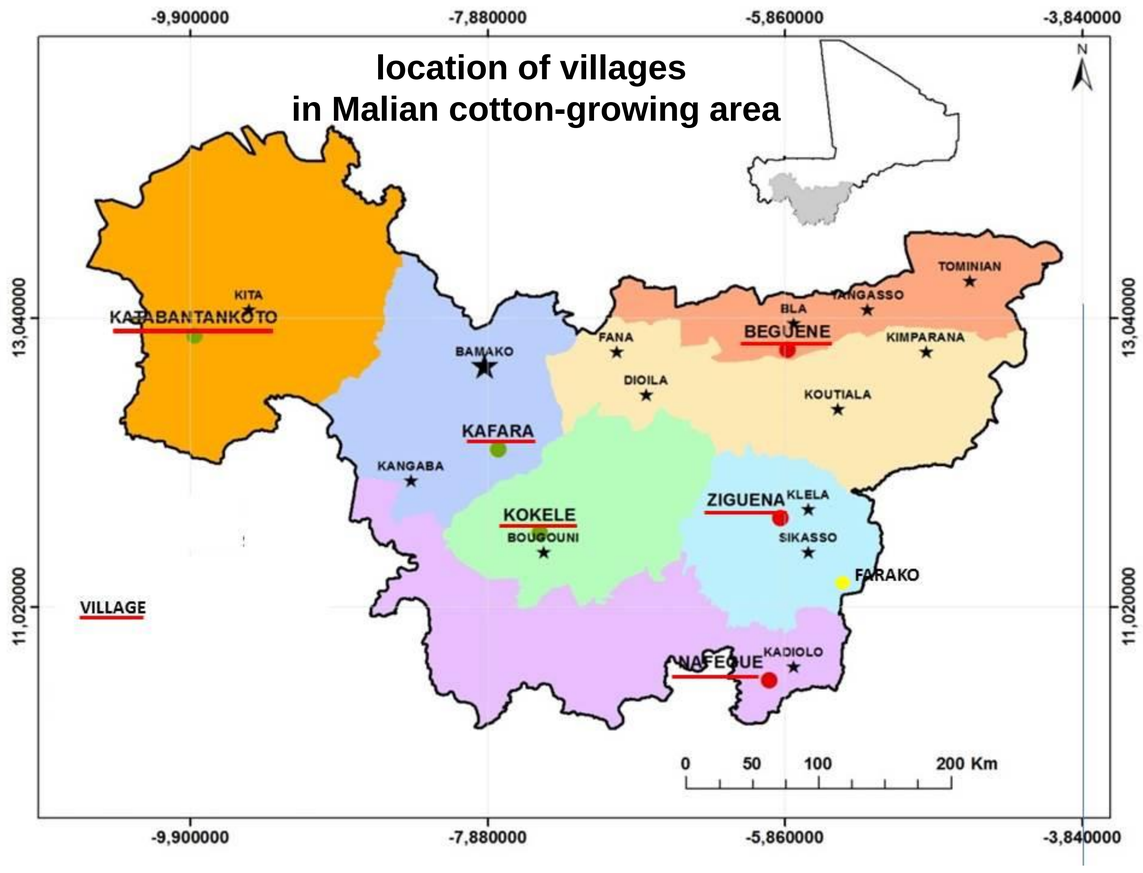
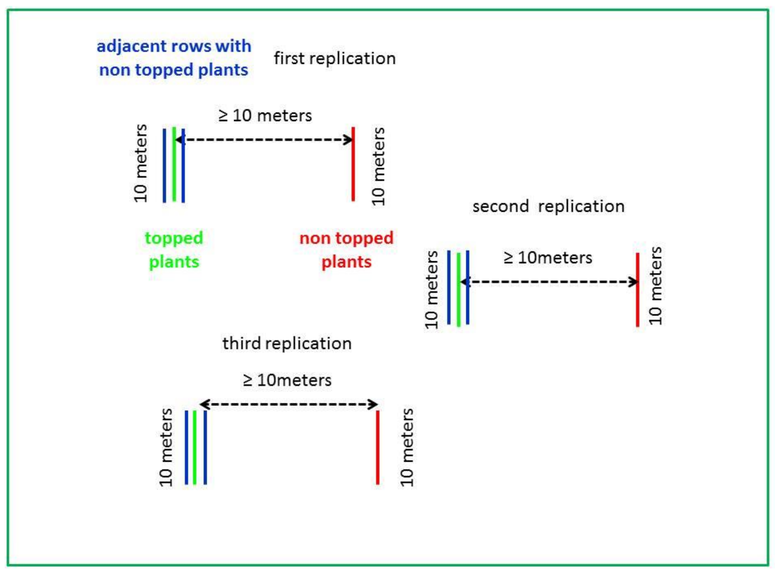
Bollworms such as *Helicoverpa armigera*, *Diparopsis watersi* and *Earias* sp., are a major constraint of cotton production in Mali. Up to now, their control has primarily relied on chemical sprays. Finding ecologically-based alternatives to control those pests is a strategic issue for cotton production. We, here, report results from field experiments on cotton topping, as a promising technique to control bollworms.

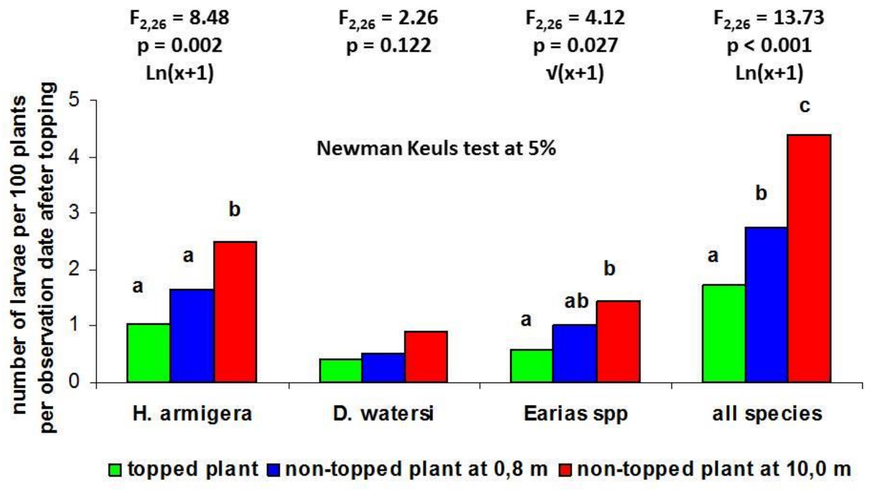
Manual topping cotton 10 days after the first flower



First study in 2014

viilages : Benguéné, Ziguéna, Nafégué
5 cotton fields per village
3 replications per cotton field
implementation per cotton field

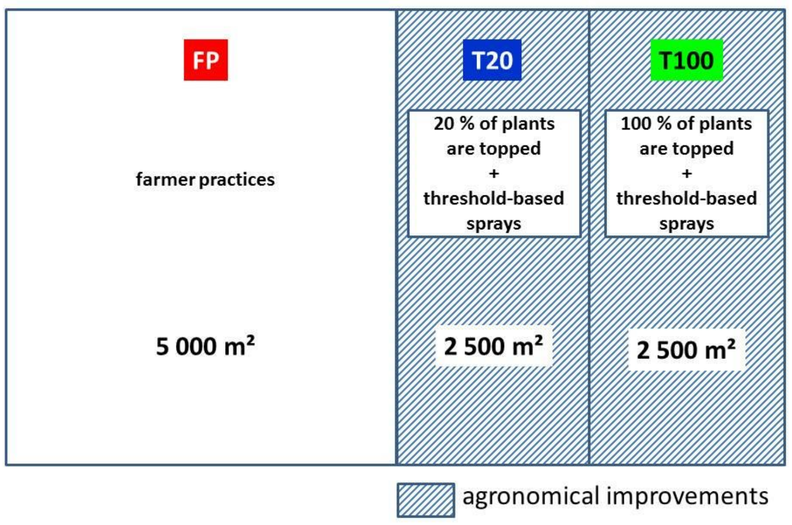


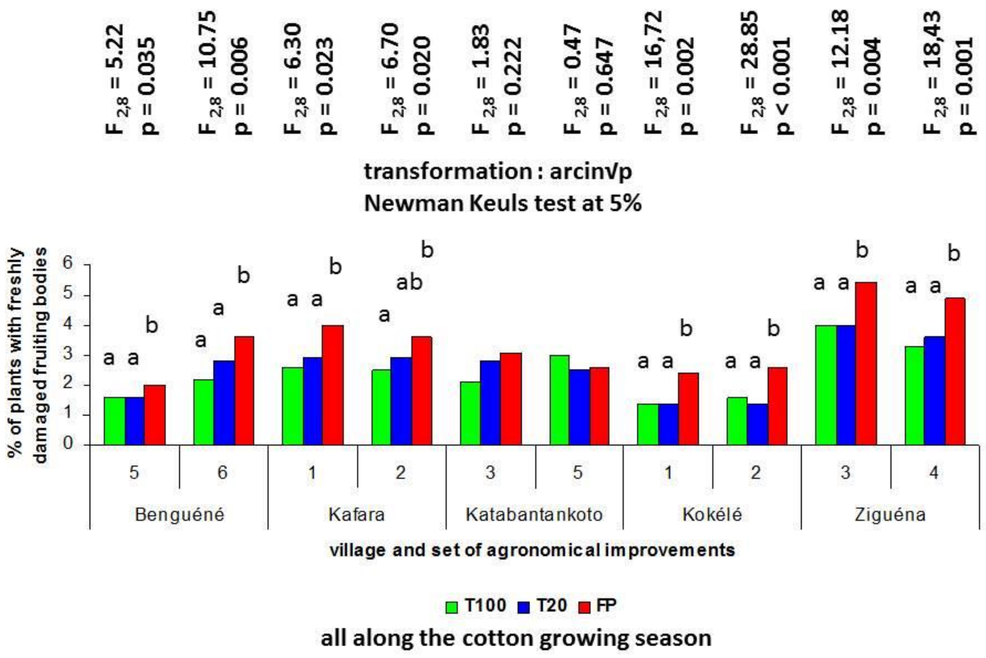


In 2014, bollworm abundance was significantly lower (-60.7% for all species) on topped plants vs non-neighboring non-topped plants, except for *D. watersi*. Bollworm abundance was also lower (-37.2% for all species) on neighboring non topped plants vs non-neighboring non-topped plants, but this was only significant for *H. armigera.*

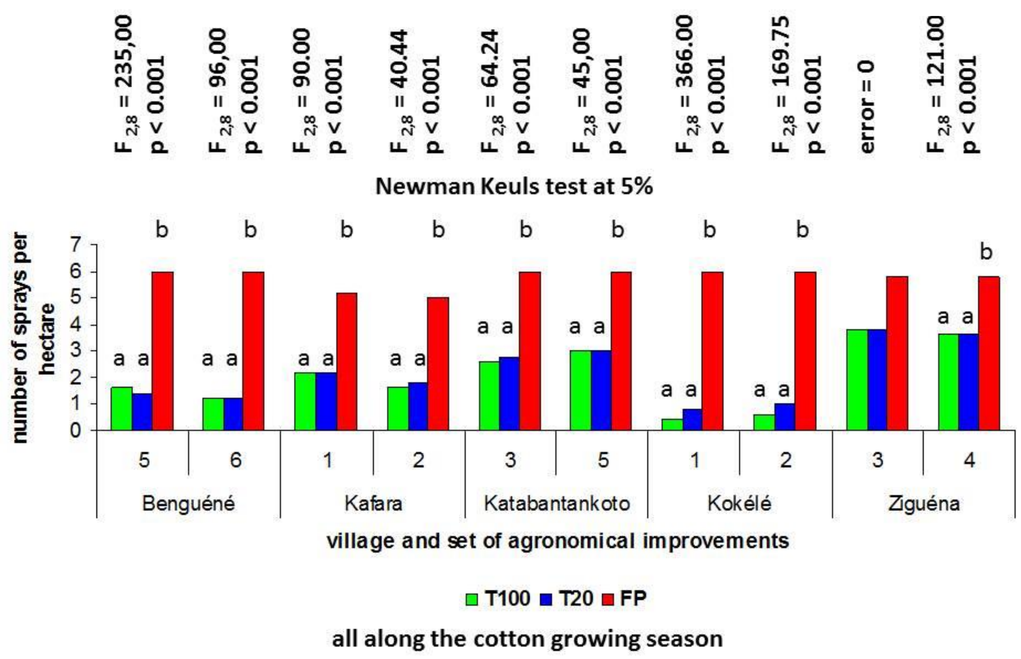
Second study in 2015

villages : Benguéné, Kafara, Katanbantankoto, Kokélé, Ziguéna
2 sets of agronomical improvements/village
5 cotton fields/set of agronomical improvements
implementation per cotton field

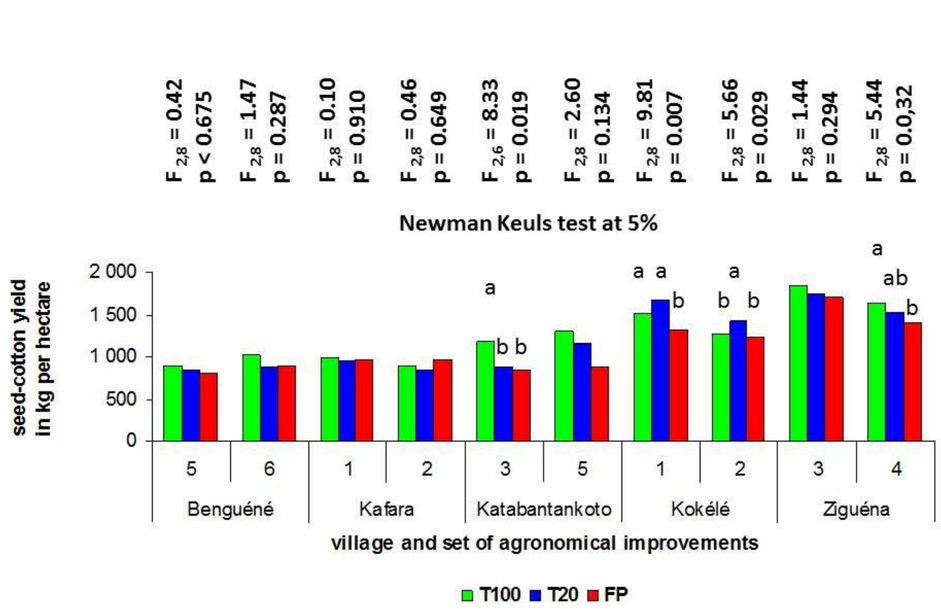




Proportion of plants with freshly damaged squares or bolls was greater with FP (3.4%) compared to T100 (2.4%) and T20 (2.6%). Except at one location, bollworm control was significantly improved regardless of the villages and the agronomical improvements.



Compared to farmer practices (FP), in average 64.4% and 62.4% of sprays were saved with T100 and T20 respectively



Seed-cotton yield was significantly improved with T100 and T20 in 3 and 2 out of 10 location x agronomical improvements, respectively.

These results show a significant effect of topping on the incidence of bollworms, not only on topped plants, but also on neighboring non-topped plants. They also underline the potential of topping to reduce insecticide use in cotton in Mali.

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